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PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 2 1930

REPORT FOR THE WEEK ENDING AUGUST 2, 1930.

JUDITH BASIN:

Threshing of the winter wheat and oats in the rotations has been completed. The yields of winter wheat ranged from 3.3 bushels for the shallow fall plowed plot to 19.0 bushels for rotation 51 where winter wheat followed rye, green manure. The average yield of winter wheat on three plots after rye green manure was 15.1 bushels, on two plots of peas as green manure 13.0 bushels, on four plots of fallow 12.0 bushels, and on four plots following disked corn 11.3 bushels.

The oat yields ranged from 14.4 bushels for the continuously cropped plot plowed with the one-way disk to 31.9 bushels on the alternate crop fallow plot. The average yield in all rotations was 22.4 bushels per acre.

Harvest of barley on the rotations has been completed and that of the spring wheat and flax will be finished next week.

Maximum temperature 94; minimum 39; precipitation, .09 inch.
Total precipitation for July, 1.25 inches.

HUNTLEY:

With the exception of one light shower the weather during the past week has been dry with fairly high day-time temperatures. Most crops have wilted badly every day and the growth progress noted a week ago has apparently been checked. Sorgo is the only crop that to date has shown no sign of burning due to drought.

Spring pigs that have been carried on miscellaneous alfalfa pasture since their removal, June 19, from the winter rye plot of the pasture rotation were placed on Sudan grass and sorgo pastures July 31. Soybeans which have usually been grazed along with the Sudan and sorgo will not be much of a factor in these experiments this year as the stands are very poor and the growth stunted.

Station visitors during the week have included Mr. A. Osenbrug, of the Belle Fourche Station, Mr. J. F. Brandon, of the Akron Station, and Messrs. J. A. Clark and Karl S. Quisenberry of the Office of Cereal Crops and Diseases.

Maximum temperature 102; minimum 47; precipitation, .08 inch.

SHERIDAN:

Hot, dry weather continued throughout the week. Corn, sorgo, and close drilled Sudan grass began to fire early in the week. Harvesting of small grain was completed, with the exception of late seedings.

Maximum temperature 101; minimum 50; precipitation, .03 inch.

MANDAN:

Agronomy

The past week was dry with moderate temperatures during the early part and high temperatures towards the latter part.

Harvesting of small grain plots was completed during the week. Oats and barley in the feed fields were also cut. Some late seed blocks and flax remain to be harvested.

All fallow plots were given the second duckfooting, and all alleys were cultivated.

Corn is still looking good but is curling again badly during the heat of the day. Another good rain would about insure a crop. Many ears are in the roasting ear stage now.

The month of July was hot. The average maximum temperature was 89 degrees which equalled that of 1919 and 1921. The average minimum temperature was 60 degrees, which was exceeded by 1916 (64 degrees) and 1923 (61 degrees). The mean temperature was 75 degrees which equalled that of July 1916.

The total precipitation for July was 2.40 inches, compared with the 55-year average of 2.32 inches for this area. The precipitation from January 1 to July 31 totalled 9.71 inches, compared with the 55-year average of 11.62 inches for the same period.

The below normal rainfall of June was the main cause of the reduction in possible yields of small grain. There was little reserve moisture in the soil and the hot period in July burned the crops rapidly.

Mandan, continued:

Agronomy, continued

In some areas not far from the station where they received a good rain or two in June that did not reach the station, there is some wheat that may make 25 bushels per acre on good fallow.

Maximum temperature 97; minimum 48; precipitation, none.

Cooperative Grazing Experiment

The cattle made near normal gains for July in most of the pastures. The cattle in the small pasture made low gains, as the pasture is short and dry. The brome-grass is dry and woody and the cattle did not do as well on it as they would have under more favorable conditions. The 11 steers on the 10-acre brome pasture for the month of July cleaned it up fairly well. A good deal became so tough that they would not eat it. The cattle were taken out of this pasture and put on the reserve. A good deal of brome-grass has gone to seed in the 25-acre brome pasture. The cattle did not do as well in the rotation pasture as they had to graze a short pasture during part of the month.

The following gains were made by the cattle during July and for the season to July 31.

Pasture	No. of steers	July gain (lbs. per head)	70 days (lbs. per head)
100 acres	10	68.5	220.5
70 "	10	71.0	210.5
50 "	10	60.0	195.5
30 "	10	12.0	115.5
Rot.(70 acres)	14	48.6	182.1
Brome(25 acres)	8	62.5	218.1
" (10 acres)	11 *	61.4	190.4 **

* 11 head for July - 6 head previous.
** 8.14 steers for 70 days.

All cattle are somewhat below normal in gain for the first half of the season.

Mandan, continued:

Horticulture

Fruit packing has been going on all week. Black currants and sandcherries have produced a very heavy crop. The last of the gooseberries were also picked during the week. There was a normal crop of these of pretty good quality.

The sweetcorn breeding is now almost over for the season. About 700 pollinations both selfing and crossing have been performed.

Vegetables are still yielding fairly well. Cabbage, cauliflower, sunshine sweetcorn, beets, carrots, and peas, are yielding moderately well. Cucumbers and tomatoes are starting to ripen, but are somewhat damaged by the heat.

Arboriculture

Weeds are being kept in check with hand hoeing, and the evergreen seedlings in the nurseries are being watered regularly.

Visitors of the week included Mr. F. A. Coffman, Oat Investigations, Washington, D. C., Mr. H. G. Ukkelberg, Black Stem Rust Investigations, St. Paul, Minnesota, Mr. H. D. McCullough, County Agent, Timber Lake, South Dakota, and Mr. J. F. Brandon, Superintendent, Akron, Colorado, Field Station.

ARDMORE:

The weather during the week continued dry and hot. There was no precipitation, and on only one day was the maximum temperature less than ninety degrees.

The average maximum temperature for July was 94.5 degrees. The mean temperature was 78. Both the average maximum and the mean were the highest on record. The evaporation for the month was 10.792 inches. This is by far the highest evaporation for a month ever recorded at Ardmore. The precipitation for July was .70 inches.

Ardmore, continued:

All grain varieties were threshed during the week. Early varieties produced fair yields, but nearly all late varieties were practically complete failures.

It may be safely stated that no corn, except possibly that on fallow and the listed plots, will produce any ears. How the corn has survived at all is a mystery. It started curling over a month ago and has been curled practically every day since that time. With thirty days of extreme temperatures, frequent hot winds, and very little rain, it is a marvel that any corn is alive. Naturally it is very short, most of the plots being fully tasseled at heights of from 3 ft. to 4 ft.

Sorgo on fallow is still in fair condition, but sorgo after grain is being badly damaged by drought.

One small field was plowed during the week, but the soil in all of the other fields is so hard that plowing must be delayed.

The steers on pasture made fairly good gains during the month. The gains on the different pastures to date are as follows:

Pasture	Gain May 22 to June 1	June Gain	July Gain	Total Gain
80 Acre	2.9	88.5	60.0	151.4
150 Acre	24.4	88.0	36.5	148.9
160 Acre Rotation	8.9	91.9	29.4	130.2
300 Acre Reserve	15.5	98.8	37.0	151.3

The water supply in the reserve pasture is getting short, and these steers must be moved soon. The feed in the eighty-acre pasture appears to be getting short but the steers continue to make good gains. All vegetation is now dried up and cured. The steers in the rotation pasture were moved to the ungrazed portion of the pasture on July 31.

The pigs in the limited ration experiment were moved to the Sudan grass pasture on July 30.

Ardmore, continued:

General work during the week consisted of baling and storing straw and hay.

Maximum temperature 101; minimum 57; precipitation, none.

There was a hot wind on August 1.

ARCHER:

The weather has continued dry. A shower of .20 inch occurred July 29. The total precipitation for July was 1.05 inches. This occurred in the form of light showers and did but little good. The temperatures have been rather high. The maximum was 92 and the minimum 52 degrees.

These conditions have not been favorable for crops, especially corn, which is badly in need of moisture. The corn leaves roll badly and the silks are appearing. The crop is so short that it will be impossible to harvest it with a binder. Unless there is immediate relief there is not much hope for a profitable grain crop. The potato and bean crops are in the same condition. The sunflowers are not much taller than the corn. The leaves are wilting badly and a few plants are in bloom. The pastures are very dry and the cows are rather indifferent to them. The leaves of the Northwest poplars are turning yellow.

Work at the station has consisted of putting up hay, cutting grain, cultivating crops and hoeing. The year's supply of coal is being hauled from Archer to the station.

Dr. Levine, of St. Paul, visited the station July 28.

NORTH PLATTE:

Light showers on three days early in the week totaled .38 inch and brought some relief from the dry, hot weather which had prevailed during July. Total rainfall for the month was .78 inch, which is 28 per cent normal.

North Platte, continued:

Threshing of D. L. A. plots was completed on July 25. Not many high record yields were made for individual plots or rotations but averages were unusually high. A brief summary is given below.

Crop	No. Plots	Min.	Max.	Average
W. Wheat	74	26.8	57.0	41.5
S. Wheat	23	17.2	32.5	26.3
Oats	62	32.8	88.1	59.6
Barley	17	23.8	52.5	36.4
Rye	5	18.9	43.9	25.7

Spring grains were of unusually good quality. Winter wheat was somewhat off color and in some cases shriveled, particularly where lodging had occurred. The average straw weight on the 74 plots of winter wheat was 510 pounds. After summer tillage, straw weights of winter wheat ranged from 672 to 913 pounds per plot.

Soil samples now being taken show a considerable amount of available moisture remaining in the fourth to sixth foot levels under small grain stubble, and a greater amount from the third to sixth foot under corn.

COLBY:

Two small showers interfered with threshing this week, so that we did not finish the D. L. A. threshing until yesterday, August 1. Some of the field threshing still remains.

The weather was cooler most of the week, but to-day was one of the hottest days of the year. The thermometer remained above 100 almost all afternoon.

Corn and the sorghums are making rapid growth. All the corn is tasseling and some of it is setting on ears. Some of the earlier sorghums are starting to head.

Maximum temperature 100; minimum 57; precipitation, .14 inch. Precipitation for July, 1.57 inches. Average precipitation for July, 2.61 inches.

TUCUMCARI:

Two cultivators have been kept moving during the week and practically all rowed increase, as well as plot land, has been cultivated. Weeds were not troublesome, but a heavy crust had formed after the heavy rain of ten days ago. All crops are growing rapidly and prospects are by far the best they have been this season. Ranges are good, with cattle in excellent flesh, but ranchers are discouraged over the low price prospect. No doubt an unusually large number of heifer calves will be held over.

Maximum temperature 93; minimum 63; precipitation, .06 inch.
Wind velocity, 4.2 miles per hour.

DALHART:

Weather conditions have remained excellent for growth of the sorghums this past week. There has been no rain; neither has there been much wind. There has been sufficient moisture in the soil to promote good growth. In several places the vegetative growth is starting to check. Crops in general on the station look good for the character of the season.

Sorghums seeded on the first two dates are now heading. The milo on the rotations should start heading next week. The early cowpeas are starting to vine and the soybeans are blooming. Cotton is showing blooms on all dates of seeding, while squares are setting on the May 1, 10, and 20 dates of seeding quite thickly. The cotton varieties and the sorghum varieties on fallow present the best appearance of all crops on the station.

Field work during the week consisted of finish cultivating of all row crops after the rains of the previous week, shooting sparrows, bagging sorghums, hoeing weeds, and plowing increase fields.

Maximum temperature 94; minimum 62; precipitation, none.
Wind velocity, 4.9 miles per hour; evaporation, 2.423 inches.

BIG SPRING:

A rain of .50 inch fell on July 31. This rain prevented the past month from being the driest July since 1900 when rainfall records were started in Big Spring.

Although this rain cooled things off temporarily, it is very doubtful if it was of any benefit to growing crops. The soil was only soaked down 3 or 4 inches. This has not caused the feed crops to revive to any extent.

The May 1 date of seeding of feterita and hegari were harvested this week, both of which were very light. Other station work has consisted of cultivating and cleaning out the fence rows. A plot of pinto beans was planted to-day.

Maximum temperature 102; minimum 67; precipitation, .55 inch.

LAWTON:

Crop deterioration continued steadily the past week under withering temperatures and cloudless skies. The total precipitation for July fell on the first day of the month and amounted to .57 inch.

Sorghum crops are intensely fired and there is but little hope of grain production. Cotton remains stunted in growth and very few, if any, newly formed squares are retained. Blooming is also on the decrease. Cowpeas have produced only a small crop of rather inferior seed, and the crop will necessarily have to be harvested within a very short time.

Drilled sorgo on rotations 274 and 275 was so nearly completely killed by drought and chinch-bugs that the remnant was cut July 29. Corn on the M. C. fallow plot was cut August 2 with only a very few poorly developed ears.

Pastures are brown and dry and the problem of feed and water is an acute one with many farmers.

Dr. John H. Martin and Dr. Chralott Elliott, both of the Office of Cereal Crops and Diseases, visited the station July 28 for the purpose of making observations on the chinch-bug sorghum resistance project.

Maximum temperature 106. During the month of July there were 15 days when the maximum temperature was 100 or over. From July 17 to date there have been only three days when the maximum was less than 100.

WOODWARD:

This week ends a 52-day period without an effective rain. All sorghum crops on the station were planted late, however, and none have yet started to head. There is still a possibility with heavy rains in August that crops which are now beginning to burn badly may give heavy yields as it is likely they would branch and sucker heavily, after being held back so long.

Over the country in general there is far less than the usual amount of land being prepared for wheat early. This is due partly to dry weather and partly to the very low price wheat is bringing.

Station work for the week has consisted very largely in watering shrubbery and trees suffering from drought, although on this sandy soil with the heavier subsoil trees long established are not easily hurt by drought. Those newly planted, however, need water constantly, and it seems to do but little good. Of the 20,000 pine, tree seedlings planted this spring it is certain that not over half of them will survive and probably far less than half.

Grape plants which have been established some years seem to suffer little from drought, but berries are small and somewhat shriveled.

Maximum temperature 105; minimum 66.

DICKINSON:

Harvest of most of the remaining small grain plots was completed during the week. Early seeded flax is mature with very light yields in prospect. Most of the late flax will likely be a total failure unless rains come soon.

Wheat harvest in the district is more than half completed. Approximately a third of the acreage is being cut with a combine this year. Grain which has come to the elevators range in weight from 50 to 60 pounds per bushel. Yields are generally low with the best ones reported around 20 bushels.

Dickinson, continued:

Field pea and grass varieties were threshed August 2. Yields of the peas were light and the seed small and shriveled. The grasses have not been cleaned for final weighing but the yields were better than expected after the extreme heat during the ripening period.

July ended with only .08 inch precipitation, the lowest record for the 39-year period. The total for the year to July 31 amounts to 9.46 inches, or 1.28 inches below normal for the period. The mean temperature for July was 3.4 degrees above normal.

Maximum temperature 98; minimum 44; precipitation, .01 inch.

AKRON:

The week has been very favorable for all field crops. Showers of almost if not quite consequential nature have proven very beneficial for corn, beans, sorgo, sudan grass, and the hay and the grain millets. The grain millet variety experiment is very promising with yields of 40 to 50 bushels per acre not out of reason. All but the late varieties are in head.

Damp weather and machinery break-downs interfered with a steady program of threshing. Progress was made, however, with the week-end finding the rate and date winter wheat experiment and the sheep rotation barley and winter wheat fields threshed. The pastured rye winter wheat field of the sheep rotation yielded at the rate of 13.0 bushels per acre. The barley on the pastured rye sheep rotation 51 yielded at the rate of 15.4 bushels per acre while the barley on the pastured fallow sheep rotation 28 yielded at the rate of 12.6 bushels per acre. These are slightly under average production and are an indication of the barley yields that may be expected.

Row crops and late seeded sown crops such as the millets are now promising heavy yields. The limiting factor in the corn yields undoubtedly will be the thin stands which maintain not only on the station but throughout the county-side.

Maximum temperature 94; minimum 55; precipitation, .84 inch.

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AUG 9 1930

REPORT FOR THE WEEK ENDING AUGUST 9, 1930.

HAVRE: (Report for the two weeks ending August 9, 1930.)

The past two weeks were a continuation of the hot, dry weather. There has been no rain and temperatures have been above normal. All harvesting is completed excepting for some late irrigated crops and corn. On some methods corn has held up in very good shape and may possibly make light yields of grain. On fall plowing it began suffering very severely and was cut during the last week. Threshing has been in progress during the last few days. The following gives a summary of the yields obtained for spring wheat, oats, and barley.

	Disked Corn	Spring Plowed	Fall Plowed	Fallow	Sub-soiled	Listed	Green Manure	Average
Spring Wheat								
No. of plots	9	9	9	6	3	1		38
Bu.per acre	2.7	1.9	2.1	12.1	2.0	2.0		4.0
Oats								
No. of plots	9	10	12	6	1	1	3	42
Bu.per acre	4.4	4.1	5.2	18.8	1.9	2.2	7.4	6.7
Barley								
No. of plots	3	5	3	4	3	1	2	22
Bu.per acre	4.5	3.2	1.9	19.0	4.0	1.9	6.1	6.5

It will be noted that there is only a slight difference in the yield after the different methods with the exception of fallow which has a decided advantage in all crops. With the exception of fallow, yields have been exceptionally low but there were only one or two plots that were under one bushel.

Combining is progressing very rapidly in this section of the state. Yields, of course, are very light. The very best range around 20 bushels in the more favored locations. The surprising thing is that the quality of the wheat is very good. Most of it has excellent color and will grade No. 1.

The stockmen in this section of the state are facing a rather serious situation. Winter range will be very light and the hay crop will be less than 50 per cent of the average. In some places there has been difficulty due to a shortage of stock water.

Maximum temperature 100; minimum 58; precipitation, none.

JUDITH BASIN:

Hot, dry weather during the past week has hastened the maturity of late seeded spring grains and has been severe on corn and row crops. With the exception of some of the flax plots which were reseeded, all harvesting of small grains on the rotations has been completed. The harvest of winter wheat in Central Montana is about completed, with yields ranging from 5 to 20 bushels.

Station visitors of the past week were Mr. J. M. Stephens, Dr. Karl Quisenberry, and Professor F. M. Harrington.
Maximum temperature 94; minimum 51; precipitation, .24 inch.

HUNTLEY:

A shower early in the week freshened up vegetation for a few hours, but continued hot weather since the rain has again wilted all crops to the point where even the most drought resistant plants are burning. Spring sown alfalfa has set a fairly heavy crop of seed this year and last week's shower served to fill many of the late forming pods.

Field work has been confined to fencing a new set of alfalfa and brome-grass pastures for the hog pasturing work next year. The present set of perennial pastures have been used since 1925, but have gone to pieces rapidly during the past two seasons as a result of drought rather than from heavy grazing. The alfalfa pastures have withstood the climatic and grazing conditions with much less injury than did the brome-grass pastures. Methods of seeding seemingly had little effect on the survival of the forage.

Station visitors of the past week included Mr. J. A. Clark and Mr. A. C. Dillman, of the Cereal Office, Mr. Stewart and Mr. Bracken, of the Utah Station, and Mr. H. E. Morris and Mr. Post, of the Montana Station.
Maximum temperature 98; minimum 56; precipitation, .23 inch.

SHERIDAN:

The weather during the past week was slightly cooler than for sometime past. Firing of corn continued to increase, however. There probably will be some corn, but the yield will be light, no ears having formed at all on a large part of the plants on most plots.

Threshing was in progress throughout the week. Winter wheat, oats, and barley in the rotations, and the most of the other plantings of the same varieties of those crops that are used in the rotations, as well as seed blocks and the other plantings of Victory and Gopher oats, and the rates and dates of seeding spring wheat were threshed. Yields of those crops in the rotations ranged from 4.8 bushels per acre on MCA to 32.7 on MCC for barley, 5.6 bushels on 576 to 40.0 bushels on MCC for oats, and 2.2 bushels on MCF and 571 to 25.5 bushels in Rotation 118. All of the lowest yields were on continuously cropped plots and the high yields on fallow. An increase block of Kharkof winter wheat on fallow on what ordinarily has been considered poor ground made a yield of 25 bushels per acre.

Mr. A. G. McCall, of the Bureau of Chemistry and Soils, and Mr. James Thorp, in charge of soil survey work in this county, visited the station during the week. Mr. J. F. Brandon, of the Akron Station, also stopped over on his way from Mandan to Akron.

Maximum temperature 95; minimum 58; precipitation, .04 inch.

MANDAN:

Agronomy

The past week has been dry but was not as hot as the previous weeks. The maximum was about 90 degrees each day of the week. One light rain fell, which was of no benefit to corn. It did tend to cool the air.

Corn still seems to be holding its own. A good rain would still help it, but it has no doubt passed the stage that rain would make it a real good crop.

Threshing of small grain started on the 6th. A light shower on the morning of the 8th delayed threshing for that day.

Mandan, continued:

Agronomy, continued.

Threshing of wheat was completed to-day, August 9. The yields per acre in the main field run from 2.7 bushels on the MC subsoiled plot, to 30.5 bushels on manured fallow in Rotation 75. The weight per bushel ran from 54 to 61 pounds.

The following table shows the yields per acre from the different methods of tillage;

	Bushels per acre
Disked corn	13.6
" potatoes	27.3
Spring plowing	12.5
Fall "	9.4
Fallow (not manured)	19.3
" (manured)	25.4
Green manured	16.2
MC - Spring plowed	10.2
MC - Fall "	4.2
MC - Sub-soiled	2.7
MC - Listed	5.2

Threshing of oats in the rotations started to-day. Maximum temperature 99; minimum 56; precipitation, .21 inch.

Cooperative Grazing Experiment

Pastures continued to dry up during the week. Cattle in the larger pastures appear to be doing well. Flies are exceptionally bad and the cattle put in most of the day fighting flies.

Arboriculture

Chokecherries have been picked and Caragana seed cleaned, in preparation for planting later. The evergreen nursery continues to require daily watering.

The shelterbelt inspectors continue to report favorably on the 1930 plantings. During the past week Mr. George, in Wyoming, has visited areas in the vicinity of Cheyenne, Torrington, and Lusk, and is now working back to territory near Edgemont and Ardmore,

Mandan, continued:

Arboriculture, continued.

South Dakota. Mr. Olson, in Montana, has reported from Cascade and Great Falls, and will be making his way to Moccasin. Mr. Murchie, also for a time in Montana, has been in the Baker area, but is now working towards the Belle Fourche plantings, in South Dakota.

Twenty boys from the Standing Rock Reservation Indian Boarding school spent Monday and Tuesday at the station. Twenty-eight cars, loaned by Bismarck and Mandan residents, containing Iowa farmers and their families, visited the station on Wednesday. A special train is carrying some 300 farmers to points of interest on the railroad.

Mr. J. Allen Clark, Western Wheat Investigations, and Mr. A. C. Dillman, Seed Flax Investigations, were visitors the latter part of the week, in connection with the work of the Office of Cereal Crops and Diseases.

ARDMORE:

The weather continued dry and hot. The maximum temperature was above 90 degrees and the minimum above 60 degrees every day of the week. There were numerous scattered showers in this section during the week, but none of any consequence touched the field station. Measurable amounts of rain fell on two days.

Field work consisted of baling and hauling straw and hay, and a little general clean up work.

The water supply in Hat Creek is entirely exhausted, and we are hauling water from near Ardmore. Seepage from the Burlington reservoir furnishes the water supply.

Corn is beginning to fire, but not badly. Sorgo on fallow still continues to make fair growth.

Maximum temperature 98; minimum 63; precipitation, .05 inch.

ARCHER:

The weather has been warm and cloudy with two showers of considerable proportions. The first, which amounted to .45 inch of precipitation, occurred during the afternoon of August 3, and the other occurred during the night of August 7. The latter came as a slow, soaking rain and amounted to 1.0 inch of precipitation.

These rains were of vital benefit to such crops as corn, potatoes, beans, sunflowers, millet and Sudan grass. Some of the corn plants had become so dry that some of the leaves had burned but the crop now is much improved. The pastures were also benefited by the rains.

Work at the station has consisted of weeding and cleaning yards. All but one load of hay was in the stack before the rains came. Preparations are under way for spraying the white weed.

During the week 11 dairy cows were sold. Eight of these were purchased by the Wyoming Hereford Ranch and 3 by Louis Veta.
Maximum temperature 88; minimum 54; precipitation, 1.45 inches.

AKRON:

The week's maximum of 94 was recorded last Saturday, August 2. Since that time temperatures have been lower. Two showers on consecutive days early in the week totaling one-half inch interfered with threshing. Local showers have been common throughout this general region this past week.

The optimum date for seeding winter wheat this past fall as revealed by the rate and date winter wheat experiment was September 1. Average yields of all rates on that date were 23.3 bushels per acre on fallow, and 30.0 bushels per acre on corn land.

Projects threshed during the week were the rotation barley plots and the winter wheat and barley variety experiments. Rotation barley yields ranged from 17.0 bushels per acre on corn land on one of the new cultural methods studies to 7.4 bushels per acre on Rotation 92. The fallow plot of the MC series yielded at the rate of 14.9 bushels per acre. For the first time in many years the fall plowed barley stubble yielded more barley than the spring plowed barley stubble. The yields from the fallow plots of the winter wheat

Akron, continued:

variety experiment were only slightly more than the yields from the corn land plots. Varieties yielding better than 20 bushels per acre on the four plots (two on fallow and two on corn land) were: Minturki-Beloglina-Buffum, C.I. 8033; Kanred Selection 0166, made at this station; Prelude x Kanred, C. I. 8886; Early Blackhull, C.I. 6686. Pesterboden Selection 1564-2-11 only failed of reaching this select class by .3 of a bushel. Yields from the Barley variety experiment were also but very very little better on fallow than on the corn land preparation. The highest yielding variety in this experiment as revealed by the 4-plot average was Club Mariout with a yield of only 21.7 bushels per acre. Other varieties well up towards the top in this experiment were: Moister, C.I. 2799; 05 White Smyrna Selection; and Flynn. This 05 White Smyrna Selection, made by Mr. Coffman at this station, proved 5.0 bushels per acre better than the parent White Smyrna, C.I. 2642 this year. It has a 6-year average yield not including this year of 3.1 bushels more than its parent White Smyrna, C.I. 2642. This 05 Selection shows almost complete resistance to the smut strain that annually takes heavy toll from the parent White Smyrna, C.I. 2642.

The outstanding thing thus far brought out definitely is the lack of response of crops to fallow preparation this year as compared to corn land preparation. This was apparently observable during the growth period, but even then it was not anticipated that the yields from the fallow preparation would be as low as they were actually found to be.

Other work accomplished was the harvesting of the Sudan grass off the general forage variety ground and off one of the hog pasture fields. This Sudan grass was in the early heading stage and stood from 56 to 60 inches tall. Prospects are bright for the second cutting of Sudan grass this year. Still other work was the mowing of weeds about the station grounds, and the cultivation of rotation fallow, green manure, and sod plots, all rotation roads, cereal variety fallow, and the general forage variety fallow.

Pig weeds have been more or less troublesome during the past two months but they seem to be making their supreme effort right now. It is disconcerting to have to suspend threshing operations to bring this weed under control.

Maximum temperature 94; minimum 54; precipitation, .54 inch.

NORTH PLATTE:

Dry weather continues. Temperature however, has been somewhat lower since Sunday, August 3, when the season's maximum of 103 degrees was recorded.

Early fall plowing was begun August 4. The process is slow and laborious. The soil breaks up in large clods which are difficult to work down with much excess weight on the packer.

COLBY:

This section has not suffered from the wide spread drought. For the most part July and some of the time in August the heat has been intense, but at no time have the crops suffered to any extent, and then only on account of the heat rather than on account of a lack of moisture. While we have had no prolonged rainy spell lately, we have averaged at least one shower of consequence a week. A heavy rain of .81 inch this week kept things looking at their best. Some of the corn is in the roasting ear stage, and all of it is setting on ears in abundance. The sorghums are shooting upward and beginning to show heads. Conditions will have to be considerably more unfavorable than usual to keep us from having at least a fair corn crop. The only damage to the corn so far has been from grasshoppers which have come into the corn fields from the barley and wheat fields after harvest. From the stand point of production this year will not rank below third for the years that the station has been here, and can rank first if the corn and sorghums do not deteriorate from now on.

All the D.L.A. sorghums received their second cultivation this week. The fallow plots were gone over with the duckfoot cultivator. The fall plowing was done for the rye, peas, and the spring small grains. The ridges were leveled on the plots that were ideal for the tillage work.

During the last two days when the wind was rather high the block of 20 fallow plots in Rotations 501 to 510 and 551 to 560 dusted pretty badly. It was the first time that we have had typical soil blowing at this station in August. The dashing rain had run the cultivated soil together so that it was in ideal condition to blow after a day or two of hot windy weather.

Maximum temperature 102; minimum 59; precipitation, .81 inch.

GARDEN CITY: (Report for the week ending August 2, 1930.)

Some fallow plots were rod weeded the past week to kill grass and weeds. Some early listing was done on rotations. Corn tasseled the past week. Milo is beginning to show a few heads in places.

Row crops are beginning to show the need of moisture quite badly. Fallow plots are holding up well at this time, other are rolling and burning some.

Maximum temperature 103; minimum 61; precipitation, .30 inch.

GARDEN CITY:

All fallows that were not cultivated last week were forkner cultivated the fore part of this week. Grass and weeds had started and were making rapid growth. All early fall listing was finished the past week. Three green manure plots were turned under the past week. Sudan was cut for hay.

Row crops are needing moisture badly. Much of the milo and kafir in rotations following a previous row crop are wilting very badly and show some burning. Some odd jobs have been hoeing weeds on the project, cleaning up fence rows, and spraying burr rag weed with sodium chlorate.

Maximum temperature 106.5; minimum 63; precipitation, .07 inch.

HAYS:

The weather continues dry and hot. Corn in this vicinity is practically dried up. It can make nothing more than a little fodder even though rains come immediately.

Sorghums are still holding on. They are wilting badly but still would recover should rains come soon. Some of these crops, however, are suffering not only of drought, but from chinchbugs. It is the opinion of the writer that milo is now suffering more from chinchbugs than from drought in this vicinity.

Hays, continued:

It is understood that feed crops are suffering severely through eastern Kansas as much as in this vicinity from drought. The drought stricken area extends west and north from here from 50 to 75 miles. Beyond that distance summer rains have been more frequent and corn looks very promising. No burning has taken place. It looks like a different country.

Field work for most part during the week has consisted in repair of drainage ditches and roadways.

TUCUMCARI:

While the total precipitation this year is only 7.32 inches, compared with a 25-year average of 10.83 inches for this period, crops are making good progress. Temperatures the past week have been somewhat lower than during July, with several cloudy days, and crops have rolled much less than last month. Milo should be in head within a week or ten days and this crop is suckering much more than in several years past. Corn is beginning to tassel.

Good rains have been received this week in many parts of the county and late crops are rapidly approaching normal development and growth for this time of season. The greater part of the wheat land which produced no crop is being fallowed, although a large acreage has been devoted to beans and sorghums. A very heavy acreage of sod is being plowed on the plains portion of the county in preparation for wheat. Very probably the greatest wheat acreage ever sown in this county will be put in this fall.

Cultivating, hoeing, and making plant counts have engaged the station force the past week.

Maximum temperature 98; minimum 58; precipitation, .05 inch.
Evaporation, 2.090 inches.

DALHART:

The cooler weather of this past week has cut down the water requirements of the plants so that very little actual droughty conditions prevail. Milo on surface planted plots is heading. The corn plots are mostly well silked now.

Field work during the week has consisted of bagging sorghums hoeing weeds, rouging sorghums, spraying cotton for web-worm, spraying and dusting for red spider, shooting birds, and spraying some isolated weed areas with calcium chlorate.

Crops in general are looking good but much of the early planted acreage is seriously damaged by dry weather.
Maximum temperature 98; minimum 58; precipitation, .28 inch.
Wind velocity, 5.5 miles per hour; evaporation, 2.3 inches.

BIG SPRING:

Weather and crop conditions have been improved very materially by recent rains during the past week. It started to rain on the night of August 6 and continued intermittently for 48 hours. During this time 2.16 inches were received. The rain fell very slowly, with the result that no run-off occurred. A rain of this character coming at this time of the year has entirely changed the crop prospects of the county for this year. Grain sorghum plots that were presenting all the ear marks of failures last week, now are showing prospects making good yields.

Work during the past week has consisted of hauling dirt for roadways and in cleaning out fence rows along the highway.
Maximum temperature 104; minimum 57; precipitation, 2.16 inches.

LAWTON:

Temperatures were slightly moderated for a day or two the past week. Otherwise the protracted period of heat and drought continues. The wind movement has been quite low most of the time and the heat has been oppressive. Pastures are brown and dry and water for livestock is becoming very scarce on many farms. Production of feed for winter usage is also becoming serious with most farmers. Should

Lawton, continued:

fall rains begin in September this problem would be greatly relieved by wheat and barley pasture as was the case in the fall of 1918. Many, however, will find it difficult to maintain their herds until that time.

Cowpeas on the rotation plots were harvested August 4. The yields averaged 1176 pounds of cured hay per acre. Only a very light crop of seed was produced. Yields from an increase field are at about the same rate.

Cotton growth remains at a standstill and the small plants carry from 1 to 3 bolls.

Sorghum crops continue to fire and head to some extent. Although the heads emerge from the boot, there is but little grain formed. In the chinch bug sorghum nursery some of the varieties are withstanding the drought remarkably well, and some grain is being produced.

Maximum temperature 107; precipitation, .01 inch.

WOODWARD:

On the 9th of June 1.05 inches of rainfall was recorded. Since then the largest rain has been .12 inch. The drought, practically unbroken for 62 days and accompanied by an unusual number of very hot days, has put even the sorghum crops in a condition where there is little probability of their yielding much. However, with good rains within the next week and a fairly late frost, grain can still mature from branches and suckers and a large amount of feed could be raised. Unless rains occur very soon this section will be without feed for the winter.

More hoeing than in a year of abundant rainfall is necessary as scattering sand burrs, which it is hardly worth while to cultivate out, will germinate and grow.

The work of the week has consisted largely of hoeing weeds and watering plants.

Maximum temperature 108; minimum 65; precipitation, .02 inch.

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DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 18 1930

REPORT FOR THE WEEK ENDING AUGUST 16, 1930.

HAVRE:

The first few days of this week were a continuation of the warm, dry weather of the past several weeks. A slow rain most of Friday, August 15, totaled .30 inch. It began early in the morning and while the total amount of precipitation was not great, temperatures and humidity have been lower. If these lower temperatures continue, there might yet be some revival of late grain crops and gardens.

Threshing is practically complete on the station except for a little irrigated oats.

Mr. J. M. Stephens and Professor F. M. Harrington of Bozeman were station visitors on August 10.

Maximum temperature 97; minimum 53; precipitation, .30 inch.

JUDITH BASIN:

The week has been characterized by cool, cloudy weather with a light shower of .27 inch on the 10th, and a heavy rain of 1.08 inches which fell on the 14th and 15th. All of the moisture from the two rains soaked into the soil and will be of great benefit to the summer fallow. It came too late to benefit growing crops this season with the exception of corn. Pastures may also green up some.

Threshing of spring wheat and barley on the rotations has been completed with average yields of 8.9 and 13.5 bushels per acre, respectively. All of the threshing has been completed with the exception of flax, some of the spring wheat varieties in the cereal project and a few increase plots for pure seed.

Maximum temperature 92; minimum 52; precipitation, 1.35 inches.

HUNTLEY:

The week as a whole has been somewhat cooler than was the one previous. Several cloudy days and two light showers have been a further relief from the hot and dry weather of the past month. A heavy fog settled over this locality this morning but by ten o'clock the sky was again clear.

Huntley, continued:

Field work during the week has been confined to fencing new seedings of alfalfa and brome-grass which will be used for hog pastures next year.

The twenty-third annual Project Picnic is being held to-day in Project Park adjoining the station grounds.
Maximum temperature 98; minimum 52; precipitation, .14 inch.

SHERIDAN:

Cooler weather with considerable cloudiness prevailed over the most of the week. Threshing was continued throughout the week, the most of it being completed with the exception of field peas, rye for feed, and some late seedings of small grain.
Maximum temperature 92; minimum 47; precipitation, trace.

MANDAN:

Agronomy

The past week has been dry but much cooler than for some time.

Threshing continued during the week. Oats and barley were completed and the grain varieties of the Office of Cereal Crops and Diseases were also completed. The 15 acres of oats in field P were also threshed. This field, which was fallow last year, made 43 bushels per acre. Flax is being threshed to-day.

Oats in the main field ranged in acre yield from about 3 bushels on subsoiling to 49 bushels on manured fallow. The oats was of good quality and ran a little over 32 pounds per bushel. It was so dry that a good deal hulled out in threshing. None of the crops got wet after they were cut.

Some of the corn is drying up and will have to be cut soon. Corn on spring plowing is still holding out, but that on fall plowing is drying up.
Maximum temperature 92; minimum 45; precipitation, .07 inch.

Mandan, continued:

Cooperative Grazing Experiment

The pastures are all very dry. The steers are still on the 30-acre pasture but have made practically no gain so far this month. The steers in the rotation pasture were moved to the last division during the week. It is doubtful if there will be enough feed to carry them to the end of the season.

The hay in the mowing experiment was cut during the week. The units that are cut each year averaged 137 pounds per acre compared with the 10-year average of 312 pounds per acre. The units that are cut once in two years averaged 557 pounds per acre as compared with the 10-year average of 750 pounds.

Arboriculture

Watering of the conifer nurseries continues. Mr. E. J. George reports from Rapid City and Wall, South Dakota, Mr. Clarence Olson from Fort Benton, Montana, and Mr. Archie A. Murchie from Lemmon, South Dakota. Mr. Murchie will probably complete his itinerary by about August 23. All report some rain the past week.

Horticulture

Pollinating in the sweet corn breeding project was discontinued August 8. A number of selections are vigorous and green despite the drought, while others are "firing" and "curling". The former are being concentrated on in the pollinating, hoping a decidedly drought resistant strain of Golden Bantam might be developed for this region.

Tomatoes in the tomato breeding project are ripening rapidly. Both plants and fruit are so badly damaged by the drought that no selections will be made this year. Notes on the general behavior of the existing strains are being taken in order to improve on next year's planting.

Mandan, continued:

Horticulture, continued.

Melons, both musk and water, are still holding their own. A nice crop of fruit is set and if rain comes this fall, fair results are anticipated. Vegetables are still yielding fairly well. Carrots, beets, cabbage, sweetcorn, cucumbers, summer squash, potatoes, and tomatoes are harvested daily in the acre garden.

The method of pruning and staking tomatoes as practiced in the acre garden shows up very favorably this year. Fruit is of good size and quality, and started ripening two weeks ahead of vines not staked and pruned.

Visitors of the week included Mr. F. D. Richey, In Charge, Corn Investigations, Washington, D. C., Mr. L. W. Boyle, Flax Diseases, Fargo, North Dakota.

ARCHER:

Excessive rains and high humidity have prevailed during the past eight days. During this period the precipitation totaled 4.21 inches. This makes a total for the month, to date, of 4.68 inches. This is the largest amount of precipitation during August in the history of this station. The precipitation for the week was 3.21 inches. The manner in which the rain fell caused but very little run-off. Therefore, the soil is well supplied with moisture.

This precipitation has, to a considerable extent, changed the outlook for such crops as corn, beans, potatoes, sunflowers, millet and to a less extent, the late seeded wheat and oats. While the weather at present is rather cool it will probably warm up and cause a much better yield of the crops mentioned above. Prairie grasses have become green and Grama grass is making a good growth. The moisture in the soil will greatly stimulate the seeding of winter cereals.

Archer, continued:

Whenever it was possible to do outside work it consisted of hoeing Russian thistles out of the corn and sunflowers, hauling manure, fixing fence, and cleaning yards and roadways. Inside work consisted of machinery repair, repair of doors and remodeling the granary. All of the remaining grain for the dairy herd has been ground and stored in the loft of the dairy barn.

Maximum temperature 78; minimum 50; precipitation, 3.21 inches.

COLBY:

Two showers of .34 inch and .33 inch on successive days this week kept the row crops growing nicely and added some moisture to the wheat ground, which, except on summer fallow, did not have an abundance. In various parts of the county the rainfall was much heavier, soaking up the ground quite thoroughly. The weather has not been of the wheat acreage reducing variety.

Even the listed plots of corn have corn in the roasting ear stage. Most of the surface planted corn is beyond the roasting ear stage. The feterita and kafir are showing a few heads, but the milo does not show any heads in the boot yet.

Maximum temperature 94; minimum 60; precipitation, .67 inch.

GARDEN CITY:

Row crops are almost standing still for lack of moisture. Milo and kafir on fallow are heading slowly. Cowpeas have quit growing and will have to be cut in a few days. Cutting weeds and hoeing out fence corners has been done the past week. The first cutting of Sudan grass has been made. Yields ran from a half a ton per acre on continuous cropped land to nearly two tons on fallow plots.

Maximum temperature 101; minimum 62; precipitation, .19 inch.

TUCUMCARI:

The week has been about normal in temperature, but low in precipitation and evaporation, and exceptionally low in wind movement. Only .33 inch precipitation has been received since July 22 and crops are at last beginning to fire slightly. The total for the year is 7.58 inches, compared with a 25-year-average of 11.50 inches for this period. Most D.L.A. milo and kafir plots are beginning to head. With average moisture for the next six weeks, yields should be higher than usual.

During the week cultivating, making of plant counts, and weed mowing have been pursued.

Maximum temperature 93; minimum 58; precipitation, .22 inch.
Wind velocity, 3.3 miles per hour; evaporation, 1.829 inches.

DALHART:

The weather continued warm, calm, and dry during the week. Crops are showing a pronounced uneven distribution of moisture. In general they appear to good advantage but yields are being lowered due to fast depletion of soil moisture. The absence of wind has been a very favorable climatic factor. Showers have threatened several times during the week but no rain of consequence has fallen near the station.

Work during the week has consited of bagging sorghums, harvesting Sudan grass, shooting sparrows, and miscellaneous improvement jobs.

Maximum temperature 93; minimum 58; precipitation, .10 inch.
Wind velocity, 3.7 miles per hour; evaporation, 1.943 inches.

BIG SPRING:

Although the weather has been very hot during the past week, all crops have made a very good growth. With the exception of the early dates, all plots seem to have responded to the rains of the previous week. All sorghums are now heading and present a very healthy appearance. Cotton leaf worm has been found on some of the plots; these will probably have to be sprayed with calcium arsenate within the next few days.

Big Spring, continued:

Station work during the past week has consisted mainly of disking fallows, orchard, roadways and fence rows, and in cultivating all plots, and plowing under cowpeas for green manure.

Maximum temperature 100; minimum 62; precipitation, .02 inch.

LAWTON:

Parching temperatures and lack of rain continue unabated. A few rain clouds developed scattering showers within the county on the 14th, but they were of no value. Maximum temperatures of 107 were recorded on three days in succession during the week. From July 12 to August 16, inclusive, there were 29 days when the maximum temperature was 100 or over.

Most of the ponds on farms throughout the county are dry, and hundreds of farmers are hauling water both for livestock and domestic use from a few artesian wells and from some of the larger creeks.

Feed crops on the upland are pretty well burned up and most farmers are harvesting to save what little there is.

Cotton bolls are cracking open prematurely. The seed is small and the staple is of fair length, but the fiber is quite weak. The first bale of cotton to be brought to the gins in Comanche County came from a field of 175 acres on the 15th.

A few more plots of kafir on the station were harvested during the week. The remaining plots will likely have to be cut within a few days.

Dr. R. H. Painter and Mr. Winburn, both of Manhattan, Kansas, were station visitors August 15.

Precipitation, .01 inch.

WOODWARD:

Several "dry rains" have occurred the past week. Clouds would gather, everyone would sigh with relief and say "At last rain is here". But after a few scattering drops the clouds would disperse and the sun would shine as brightly as usual.

The last beneficial rain was on June 9, and August 16 gives a period of 69 days without rain. Kafirs which were planted the first of June are heading out. Heads insist on pushing out rather than burning in the boot. Considering the very extended drought the sorghums are standing up remarkably well. Late planted milos which have not yet begun to head still have a chance to make good yields.

Grapes are yielding a fair crop despite the late freeze and the extended dry spell. Grapes, at least those planted on the sandy land of the station, are as remarkable as the sorghums in withstanding the drought.

Work of the week has consisted largely in watering shrubbery and nursery stock, and in constructing telephone and electric light lines.

Maximum temperature 105; minimum 66; precipitation, .13 inch.

ARDMORE:

The long drought was broken by a rain of .99 inch on August 11. This rain extended over a large territory and brought a good head of water down Hat Creek. Water for stock and domestic purposes at the Field Station should be available for the rest of the season. Showers threatened on nearly every day of the week, but on only two other days was a measurable amount of rain received. In some localities there was enough run-off so that dams were filled, but many farmers are still short of stock water.

The rain should be of material benefit to sorgo, millets and gardens. Corn was too badly damaged to recover. It should now be possible to resume fall plowing.

Maximum temperature 91; minimum 52; precipitation, 1.92 inches.

AKRON:

A report for the past week might well end with the one word, rain. Measurable quantities of rain have been received at this station on each consecutive day beginning with and extending to August 14. During this period the sky has been overcast and it was impossible to prevent shocked grain from sprouting. Temperatures have been relatively low, a great relief from the hot weather experienced earlier in the summer. This station seems to have been on the edges of the really hard rains. When we received .75 inch it was reported on reliable authority that the region 30 miles south received a rain of from 2 to 4 inches. When we received .77 inch it was reported and was visibly evident that Akron just 5 miles west had received a rain of from 1½ to 3 inches. When we received .43 inch, Otis 11 miles east actually measured a rain of 3½ inches. Nevertheless, the station total for the week was 2.50 inches, really all the ground would absorb in so short a time.

Threshing, the one urgent job at this season of the year, has been at a standstill. On Friday and Saturday after the appearance of the sun once again the station force was busy tearing apart and resetting the shocked grain. Early in the week some double disking of stubble areas was accomplished, the object being the control of the verdant and ever-present pig weed. Other field work was the plowing and listing of the early fall worked rotation plots. Though the grain had not all been threshed, the chocks were set over on the plowed ground near the ends of the plot. Conditions were nearly ideal for accomplishing this work and to have delayed would have stacked up work for a later period.

An unusual number of farmers have visited the station during the lull in field operations. A goodly number of these were new-comers to the region. With better crops the last two years, agricultural attention is again being directed towards Northeast Colorado.

Maximum temperature 87; minimum 54; precipitation, 2.50 inches.

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WEEKLY STATION REPORTS

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U. S. DEPARTMENT OF AGRICULTURE

AUG 23 1930

REPORT FOR WEEK ENDING AUGUST 23, 1930.

JUDITH BASIN:

Light showers the first five days of the week have delayed threshing and other field work. Pasture and hay fields have greened up considerably since the rains of a week ago and will furnish considerable fall feed. The rains of the past ten days have delayed the harvest of the spring wheat crop and encouraged the growth of Russian thistles, so that some difficulty is now being experienced with the combining of spring wheat, due to the green weed tips in the threshed grain.

Most of the past week has been spent in cleaning up the shelter-belt. All of the Tartarian maple, poplar, and practically all of the willow and Buffalo berry were pulled out.

Maximum temperature 82; minimum 48; precipitation, .37 inch.

HUNTLEY:

Four light showers have been received at the station during the week. Nearby communities were visited by devastating hail storms which in some places practically wiped out the beet, bean, and third alfalfa crops, but did little damage to grain crops as most of the latter had been harvested.

Threshing operations were begun on August 19 and were completed August 22. Of this period the threshing of the dry-land crops occupied about two hours, there being but 6 plots in the rotation experiments and 30 small plots in the winter wheat variety test that made enough growth to be cut.

Maximum temperature 94; minimum 48; precipitation, .24 inch.

SHERIDAN:

Weather conditions continued fairly cool over the most of the week as compared with the heat of July and the first half of August, and there was some cloudiness. Corn continued to dry but most plots are ripening some ears, and on continuous cropping corn there will be a fair crop. All solid seedings of Sudan grass and sorgo were cut. Threshing of small grain was completed with the exception of a few late dates of seeding which were not dry.

Maximum temperature 94; minimum 44; precipitation, none.

DICKINSON:

Cooler weather continued through the week. Four light showers delayed harvesting and threshing, but did not add much water to the soil. Precipitation to date in August amounts to only .55 inch.

Combine harvesting has been about completed in the locality. Shock threshing is about half finished. Yields are running from 5 to better than 20 bushels to the acre, with an average around 10 to 12.

Threshing on the station has been completed except for a few plots and the cereal nursery.

Corn has developed very slowly, due to the dry weather. Both grain and fodder yields will be below average.

Fruits have been ripening during the past two weeks. Both plums and apples are small in size and poor in quality. Yields are low, due to the small size of the fruit, even though most varieties had a heavy set of fruit.

Recent visitors included Director P. F. Trowbridge, Mr. R. B. Murphy, and Mr. W. J. Church, members of the State Board of Administration, Mr. A. C. Cooley, Director of Extension and Industries, U. S. Indian Service, Department of Interior, and Mr. Ralph P. Stanion, Superintendent, Fort Berthold Indian Reservation, Elbowoods, North Dakota.

Maximum temperature 90; minimum 50; precipitation, .46 inch.

MANDAN:

Agronomy

Good rains fell during the past week. They will no doubt be of some aid to corn, which had not burned too badly. Corn on spring plowing will no doubt fill out a little better because of the rain.

Corn on fall plowing in the rotations is being cut, as it was burned so much that the rain could not help it.

Mandan, continued:

Agronomy, continued.

Rain delayed field work, but most of the seed grain was cleaned up.

Weeds are growing rapidly in the stubble plots. It will no doubt be necessary to mow plots to be fall plowed because of a rank growth of thistles.

Maximum temperature 88; minimum 54; precipitation, 1.30 inches.

Cooperative Grazing Experiment

The pastures which have been very dry should be helped by the rain. Blue grama grass will no doubt make some growth that will add to the feed supply.

Brome-grass should start a rapid growth now, and may extend the grazing period on it.

Horticulture

Fruit picking has been carried on most of the week. The recent rains made it imperative to get all sandcherry hybrids off the trees before the crop spoiled entirely. It is a serious fault of these fruits that they crack open and spoil immediately in wet weather. The varieties harvested included Crabs - Florence, Dolgo, Jenkins, Alexia. Apples - Red Wing, Anisim, Anoka, Duchess. Plums - Sandcherry hybrids: Compass, Opata, Sapa, Zumbra, Tom Thumb, Eyami, Oka. Americana: Negra and hybrids, Cree, Pembina, Oziya, Ojibwa, La Crescent, Underwood, Hennepin, Minn. Nos. 71,55,157, Valley River, Olson, Wilson River, Mammoth, and a number of station selections.

Vegetables are continuing to yield well. The third planting of Golden Bantam sweetcorn is now at its best and yielding ears of prime quality.

Lawns and flower beds have improved greatly since the rain. Canna variety - The President - is indeed a beautiful plant.

Mandan, continued:

Horticulture, continued.

Portulacca weeds have become a serious pest in the fields. Hoeing and cultivating has little effect in eradicating it. Several men and teams have been busy on the job the latter part of the week.

Arboriculture

Mr. E. J. George reports from Fort Pierre, South Dakota, and Mr. Clarence Olson from Billings, Montana. Both have been delayed by rain. Mr. Archie Murchie reported at the station Friday, August 22. He reports that he was only delayed about one-half day during the entire two months.

Mr. J. M. Jones, Texas State Experiment Station, Mr. K. P. Pickrell, Arizona State Experiment Station, Mr. F. C. Bishopp, Bureau of Entomology, Washington, D. C., and Mr. W. C. McGinnies, Range Ecologist, Arizona State Experiment Station, were visitors during the week.

ARDMORE:

The rains of the previous week, combined with a good shower on August 17, wet the soil to a depth of from 6 to 9 inches, and put it in excellent condition for plowing. After the surface of the soil dried sufficiently to permit field work, the balance of the week was devoted to plowing plots and fields and duckfooting summer fallowed land.

The corn in the fields presents a peculiar condition. The few ears that formed during the drought period are practically ripe. Stalks that did not produce ears are now beginning to silk. There are about ten plots with enough ears to warrant harvesting. Many plots formed no ears at all.

Sorgo has recovered to some extent since the rain and should produce enough feed to satisfy our winter requirements.

Ardmore, continued:

The weather was cool and cloudy throughout the week, but only one shower of more than .01 inch occurred. Weeds made more growth than at any other time during the season.

Mr. J. R. Dawson, of the Bureau of Dairy Industry, and Mr. E. Z. Russell, of the Bureau of Animal Industry, visited the station during the week.

Maximum temperature 89; minimum 53; precipitation, .72 inch.

ARCHER:

The storm period continued during the first three days of the week, during which time there were 1.08 inches of precipitation. Since then there has been .02 of an inch of precipitation, which makes a total of 5.78 inches of precipitation to date during August. The storm period started August 7 and ended during the night of August 18. Precipitation occurred every day and amounted to 5.29 inches for 12 days. The rain came slowly and soaked into the soil with the exception of that which occurred August 17 and 18. On these dates the storms consisted of thunder showers with some hail which did some damage to the corn. These storms produced considerable run-off.

The effects of the storm were marked in two directions. Shocked grain and hay in the field were seriously damaged. Ripe grain standing was damaged to a considerable extent. On the other hand, corn, sunflowers, beans, potatoes, Sudan grass and millet were greatly benefited. The native grasses have made a remarkable growth and the weeds have taken on new life.

Work at the station has consisted of remodeling the granary, repairing machinery, reshocking grain, harvesting varieties of barley, oats, wheat, flax and rotation plots of spring wheat. The spraying of white weed is in progress.

Dr. J. S. Wiant and Director W. L. Quayle, of the University of Wyoming, Dr. Mary F. Howe, of the Colorado Agricultural College, Mr. A. E. Lungren, of the U. S. Department of Agriculture, were official visitors. Commodore George Hewlett and Mr. Charles Hirsig were station visitors August 22.

Maximum temperature 87; minimum 47; precipitation, 1.10 inches.

AKRON:

The week has been favorable for field work, but weed control measures interfered with undivided attention to threshing. Consequently the rotation oat and spring wheat plots remain to be threshed next week. Threshing projects completed during the week were the oat variety experiment and the rotation winter wheat plots. Oat yields have not as yet been tabulated.

Highest yield on the rotation winter wheat plots was 20.8 bushels per acre, and the lowest yield was 7.2 bushels. Fall plowed stubble yielded about average and fallow plots only slightly above average. The MC fallow plot and the fallow plot of Rotation 28 varied only .1 of a bushel. These two plots have a 21-year average yield of ½ bushel of each other. Furrow drill seeded fallow yielded only ½ bushel better than common drill seeded fallow.

Sudan grass and sowed sorgo were harvested from the general forage variety experiment for hay. White Ural was harvested from the grain millet variety experiment. Flax and Safflower and the late seeded spring wheats were harvested from the date of seeding spring grains experiment. Oklahoma Dwarf and Black Spanish broom corns are in full head. Scarborough is just heading. The grain millet varieties seeded June 23, will be harvested early next week. First date seeding of the rate and date winter wheat experiment was made Monday, August 18, rains and wet ground interfering with prompt August 15 seeding. All fallow and green manure plots were spring-tooth harrowed early in the week to break the crust left by the recent hard rains. Early fall plowed plots plowed last week were packed early in the week. Practically all the stubble land has been duckfoot cultivated with the front row of shovels removed from the implement. Orchards were also cultivated. Hoes were busy at each odd time and still the station presents as weedy an appearance as at any other time this season. Following the completion of the threshing, undivided attention can be directed to the weed problem which to date has been merely kept under control.

Modoc, Tribune No. 36 looks very promisingly early in the grain sorghum section of the general forage variety experiment. Most other reasonably early varieties are in full head, and in most cases in full bloom. This Tribune selection mentioned above appears to be practically as early as Brown Manchu which means it is plenty early enough for this region.

Akron, continued:

Pigs are being triple weighed this week-end preparatory to closing the experiment. Pasture pigs without fed protein made 94 per cent the gains of the dry-lot bunch.

Maximum temperature 93; minimum 52; precipitation, none.

NORTH PLATTE:

Rains have occurred over the state quite generally during the past two weeks. This locality has been less fortunate than many others. The heaviest of several showers came yesterday and amounted to only .45 inch. Both east and west within less than 50 miles, rains of one to three inches have occurred.

Corn in western Nebraska will yield above normal. In the eastern and southern parts of the state, the crop will range from poor to complete failure. On this station, yields slightly above average seem probable.

COLBY:

One of the heaviest rains we have had in ten years fell Saturday night. Almost two inches fell in about an hour. Although there was considerable run-off, the ground is well soaked. Some hail accompanied the rain, cutting up the leaves of corn and the sorghums considerably. Volunteer wheat and barley are up thick in most fields. Considerable fall seeding has been done and much of the wheat is coming up.

Corn is filling nicely and the sorghums are making rapid growth. Feterita and kafir are almost headed out and the milo is beginning to head.

Maximum temperature 92; minimum 58; precipitation, 2.04 inches.

GARDEN CITY:

Work the past week consisted of cultivation of fallow plots and hoeing out scattering weeds in fence rows, alley-ways and roads.

The weather is beginning to become real dry. Sorghums have stopped growing and are firing on many of the plots. Very few heads are showing in kafir or milo plots, except where these crops are grown on fallow.

Temperatures the past week have been rather moderate and nights fairly cool.

Maximum temperature 101; minimum 60; precipitation, .08 inch.

TUCUMCARI:

Crop prospects in this locality have slumped materially the past week. After rains of 2.2 inches a month ago, all crops responded rapidly and sorghums made a large number of suckers. Growth was unusually vigorous until a week ago, when lack of moisture and the presence of intense heat caused extensive rolling and firing. During the week, three days have been 102, with a mean temperature for the week of 83½. Milo and kafir are barely in full head, while Mexican June corn is about one-half tasselled. All cowpeas are turning yellow and will have to be cut immediately although they are immature.

Although firing extends well toward the top of many milo plants, it is likely that if rains are received soon there will be enough suckers which mature to produce fair yields. Crop prospects over the county have dropped at least 50 per cent during the past week.

Precipitation for the year to date totals 7.58 inches, compared with a 25-year average of 12.10 inches for this period.

Maximum temperature 102; minimum 62; precipitation none.

Precipitation for the month, .27 inch.

Wind velocity, 4.2 miles per hour; evaporation, 2.515 inches.

DALHART:

Two showers of less than one-half inch each relieved the drying sorghums some during the week. The showers were each local in extent.

Corn is earing up fairly well, although a rather hasty examination of plots and fields show that there will be many barren stalks. Sorghums are drying at the base of the plant except on late planted or thin stands. Cowpeas and soybeans are presenting a good appearance. Cotton is setting quite a few bolls. An examination this evening shows that it will be necessary to spray again for the web worm at once.

Bagging sorghums and removing bags from those bagged earlier was continued during the week. The earlier plots of broomcorn were pulled and seeded. The quality of the brush on the early seeding is going to be very low. Roguing of sorghums and bird shooting was continued during the week.

Maximum temperature 99; minimum 58; precipitation, .94 inch.
Wind velocity, 4.8 miles per hour; evaporation, 2.240 inches.

BIG SPRING:

Weather conditions during the past week have continued hot and dry, with the maximum temperature ranging between 100 and 103 every day. The wind velocity during this time has been unusually low.

These constant high temperatures are having their effects on the grain and forage sorghums; many of them are rolling very badly, while others seem to be holding up very well. Cotton is making a good growth and is fruiting exceptionally well. A leaf worm infestation is occurring throughout the county, which is causing most all farmers to poison. The station cotton was sprayed with calcium arsinate during the week. The first bale of cotton produced in Howard County this year was ginned August 20.

Station work during the past week has consisted mainly of spraying cotton, and harvesting cowpeas.

Mr. E. A. Miller, Extension Agronomist of the Texas Experiment Station, visited the station, August 19.

Maximum temperature 103; minimum 67; precipitation, none.

LAWTON:

Some parts of the county, especially the eastern half, received good rains during the past week. The precipitation, so far, however, has been quite local and variable in quantity. Threatening storms appeared on several dates but station records show only .34 inch which fell on the 22nd. A severe hail storm destroyed cotton and surviving row crops over several miles of farm territory about 10 to 15 miles east of the station.

The maximum temperature for the week was 104, but two days were slightly under 100, and the maximum was only 90 onthe 23rd.

The first picking of cotton was made on the spacings in the spacings in the 44-inch rows in the spacing test on August 20. This cotton was falling out rapidly and this early picking was necessary even though the amount obtained was small.

Kafir on the rotation plots was harvested August 22. Grain yields were entire failures. Some grain will be obtained from most of the feterita plots when they are headed within the next few days.

BELLE FOURCHE:

The long summer drought was finally terminated by beneficial rains commencing August 15. A total of 1.09 inches precipitation was recorded between August 15 and August 17, and practically no run-off occurred. Cool, cloudy, threatening weather continued during the remainder of the week, but only a few light showers were received. A fine mist prevailed for a few days early in the week, and the atmosphere remained nearly saturated until Friday, August 22.

The rain and cool weather stopped the burning of corn, sorgo, and potatoes. Corn, however, was too far advanced to be benefited much by the rain, and the yield of corn grain will be extremely light. Sorgo has been stunted by the drought but will produce fair yields. Potatoes have shown a remarkable recovery from the effects of the dry, hot weather, and the vines have resumed a vigorous growth.

Maximum temperature 83; minimum 59; precipitation, .65 inch.

WOODWARD:

Much lower temperatures have prevailed the past week than have been usual throughout the summer. This is fortunate for the sorghum crops which were beginning to burn badly a week ago. They have remained practically at a standstill. While they have had no moisture to grow on, they have suffered no further injury from high temperatures. With a good rain even at this very late date, many of them would make good yields both of forage and grain, despite the fact that most of them have not had a rain since they were planted, two and a half months ago. The soil on the station where most of the sorghums are planted is sandy with a fairly heavy subsoil at two to three feet. On parts of the station where the sand is very deep, sorghums amount to practically nothing.

Farmers over the country have given up waiting for a rain to prepare land for wheat and are going ahead with disk and one-way. Work of the week has consisted of hoeing weeds, roguing crops and other odd jobs.

Maximum temperature 100; minimum 63; precipitation, .36 inch.

OCT 1930
PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR THE WEEK ENDING AUGUST 30, 1930.

PENDLETON:

The present harvest season has been an ideal one for combine harvesting. The farmers have lost but two half days since harvest started. The summer has been quite hot and long. For weeks the maximum was 93 or above. The maximum temperature for the summer to date was 107 degrees. The average daily wind velocity has been about two miles per hour.

The district in which the station is located enjoyed very satisfactory yields of wheat after fallow. Yields ranging from 40 to 55 bushels per acre are reported. A considerable acreage of spring wheat was sown this year. Reports indicate that in many instances the spring wheat gave higher yields than the fall sown wheat. In the district north and west of Pendleton the yields of winter wheat were about 50 per cent of normal. The low yields were due to poor stands and heavy weed growth.

The most outstanding work on the station this year are the results obtained with commercial fertilizers on wheat after wheat. The following are the results obtained with spring wheat on duplicate one-tenth acre plots:

Nitrate of Soda	-	150 lbs. per acre	26.8 Bu.
Ammonium Sulphate	-	200 " " "	25.2 "
Complete Fertilizer(7-8-2)	-	400 " " "	19.6 "
Superphosphate	-	400 " " "	16.5 "
Check plots (no fertilizer)	-		14.3 "

The following are the results obtained with winter wheat after winter wheat on disked land:

Nitrate of Soda	-	150 lbs. at seeding time	24.3 Bu.
Ammonium Sulphate	-	200 " " " "	15.7 "
Nitrate of Soda in spring as a top dressing		150 lbs.per acre	22.7 Bu.
Check plots (no fertilizer)	-		9.8 "

A fertilizer company put on a fertilizer demonstration near the station on August 27, using an airplane to scatter a ton of fertilizer on ten acres. It is good publicity but not very practical.

JUDITH BASIN:

Clear weather during the greater part of the week has enabled farmers over the Judith Basin to hasten the spring wheat harvest after the delay caused by the rainy weather of ten days ago. Another week and harvest will be practically complete in this section. Yields of spring wheat are ranging from 6 to 12 bushels per acre with an average of about 9 bushels.

Field work on the station during the week has been the cultivation of fallow on the general field, completion of threshing and the building of a shed for the storage of gasoline, oil and grease.

The station had an educational exhibit, illustrating some of the experimental work being done, at the Central Montana Fair during the week.

Maximum temperature 90; minimum 40; precipitation, .02 inch.

HUNTLEY:

Warm weather the first three days of the week was followed by brief but torrential thunder showers. Not enough rain fell to wet the ground to a depth that would aid fall plowing, but the penetration on fallowed land was sufficient to insure moisture for the germination of fall sown wheat.

Field work has consisted of cutting corn, Sudan grass and sunflowers, and a start was made on fall plowing. These crops were all cut with a grain binder for fodder. No ears formed on the corn this year and the crop was thin and stunted as a result of drought. Beans on fallowed land are ripening and should be ready to harvest next week. The yield will be light and quality poor.

The annual Project Fair is being held at the station to-day. The scarcity of entries of grains and corn from the dry-land communities is very marked this year and reflects the general condition of the non-irrigated farms.

Maximum temperature 97; minimum 47; precipitation, .46 inch.

SHERIDAN:

The weather has continued to be hot and dry with some wind. The majority of the corn plots in the rotation and many of the corn varieties have been cut. All of the sorghums have been cut with the exception of the Minnesota Amber variety. All of the late date of seedings of wheat, oats and barley have been harvested.

Maximum temperature 95; minimum 44; precipitation, .01 inch.

MANDAN:

Agronomy

The past week has been cool and favorable for field work. The remainder of the corn in the rotations was harvested during the week. Corn varieties in the silage test were harvested. The silage yield ran from 3.77 tons per acre for Falconer to 5.27 tons per acre for Rainbow. All varieties contained a fair percentage of corn. Fallow in field P was again cultivated.

A hail storm occurred on the 29th. The hail stones were rather large, but did not do much damage. The storm lasted only a short time. The total rainfall for August to date is 2.00 inches. The 55-year average for August is 1.85 inches. The total precipitation for the year to date is 11.71 inches compared with the 55-year average of 13.47 inches.

Maximum temperature 90; minimum 48; precipitation, .42 inch.

Cooperative Grazing Experiment

The recent rains started new growth of the Blue grama grass, and the pastures are showing green again. Brome-grass has made 3 or 4 inches of new growth.

The cattle gains for August were below normal. The grass was dry most of the month, and the flies were bad. The smaller pastures were very short and it was difficult for the cattle to get enough to eat. The cattle are below normal in gains for the season so far. Unless the rest of the season is very favorable, the cattle will not make normal gains for the season. The 30-acre steers were

Mandan, continued:

Cooperative Grazing Experiment, continued.

moved to the reserve pasture as they lost weight during the month, and there is little feed in the pasture. The 25-acre brome-grass steers were turned into their native reserve pasture. Five steers were put back into the 10-acre brome pasture, as it showed a good deal of new growth.

The cattle made the following gains during August. The table also shows the gain for the season to date.

Pasture	No. steers	Gain per head (lbs) August	100 days
100-acres	10	25.0	245.5
70- "	10	33.0	243.5
50- "	10	-5.5	190.0
30- "	10	-30.0	85.5
Rot.70 acres	14	39.3	221.4
Brome 25 acres	8	-7.5	210.6
Brome 10 acres	6 *	9.2	205.0

* These steers were on the large reserve pasture during August.

Horticulture

The work has been concentrated on hand hoeing through all fields. A number of station selections of plums were picked. These are mostly of the americana sps. and are quite promising as to earliness, size and quality.

Melons are ripening and a number of selections have been made during the week. One watermelon variety obtained from the S. P. I. Office is showing much promise this year. It is distinctly variable in color of flesh and quality, ranging from pale pink to a deep orange. The orange fleshed ones seem to be of superior quality.

The hailstorm of Friday night caused considerable damage to flower beds on the lawns, tomatoes, melons, and garden truck in general. Fruit, especially plums, was also hard hit.

Mandan, continued:

Arboriculture, continued.

Cultivation of nursery stock has been carried on during the week. Weeds have been hoed in the testing blocks, conifer nursery, seed-beds, and north windbreak.

Mr. Archie Murchie returned August 22 from shelter-belt inspection work in North Dakota, eastern Montana, and northwestern South Dakota. Mr. E. J. George returned August 29 from inspection work in Wyoming and South Dakota.

Excellent stands are reported in new 1930 plantings. Considerable killing is reported in boxelder and poplar species in the five, ten, and fifteen year old plantings. Caragana, ash, elm, and Russian olive, are making satisfactory growth in the majority of the plantings.

Visitors of the week included Mr. R. S. Towle, Superintendent of the Sheridan, Wyoming, Field Station, Mr. Lewis S. Matthew, State Forestry Station, Bottineau, North Dakota, Mr. J. B. Wentz, Assistant Chief in Farm Crops, Iowa State College, Mr. A. L. Norling, County Agent, McLean county, North Dakota, Mr. A. E. Zaitchik, District Extension Agent, Moscow, Russia, Mr. E. N. Stephanou, Agricultural engineer, Damascus, Syria.

ARDMORE:

The weather during the week was characterized by warm days and cool nights. There were two periods of precipitation and three mornings when fog occurred.

Work during the week consisted of the harvesting of silage. About 18 acres of corn were placed in the beef cattle silo and 10 acres in the dairy silo.

The yield varied from 3000 to 6000 pounds green weight per acre.

Maximum temperature 94; minimum 50; precipitation, .15 inch.

ARCHER:

During the week the weather has been rather cool with heavy dews and two showers totaling .43 of an inch of precipitation. This makes a total of 6.21 inches of precipitation thus far in August which is 1.62 inches more than for any previous August since the station was established.

The late crops continue to grow. Corn gives prospects of producing a very good crop. The prairies are green with a good growth of late grasses.

Work at the station has consisted of listing the small grain stubble in the dairy field in order to kill the weed growth. All fallow land has been duckfooted and 15 acres of winter wheat have been seeded in corn rows in the dairy field. The reconstruction of the insulation of the water supply pipes to the storage tank is practically complete. Nearly all patches of white weed have been sprayed once but will require further attention.

Mr. L. L. Newton, State Commissioner of Commerce, Dr. A. F. Larrivee, of the University of Nebraska, Mr. Val Kuska, of the Burlington Route, and Dr. V. H. Florell, of the Cereal Office, were station visitors.

Maximum temperature 81; minimum 43; precipitation, .43 inch.

AKRON:

The last week brought local showers with this station profiting but lightly, but with the heavy nightly dews they did interfere with the hauling-in and weighing of the Sudan grass harvested early in the month.

The threshing of the early spring seeded sowed crops was completed during the week, with the exception of certain late seeded plots, the flax and the safflower. The yields obtained from the rotation oat and spring wheat plots were very light indeed, the maximum oat yield being about 15 bushels, and the maximum spring wheat yield being about 8 bushels per acre, respectively. The tabulated results from the oat variety experiment revealed that it was a Burt year rather than a Fulghum year. The first four high

Akron, continued:

yielders in order were Burt Selection 5211-22, Brunker, Burt Selection 6076-16, and Burt x 60-day. In this experiment the yields from the cornland plots were practically the same as the yield from the fallow plots.

The harvesting of the bulk of the grain millets was accomplished during the week, also the harvesting of the rotation sorgo plots. The grain millets have ripened very slowly this year and were harvested with very little shattering. The only variety left to be harvested in the variety experiment is the White French. One farmer has reported a yield of 50 bushels per acre of the Yellow Manitoba variety. Windrowing of the grain millets seems already to be followed by at least 90 per cent of the growers in this region.

The work of the past week has been the completion of the small grain threshing, the harvesting of the main grain millet experiments and the rotation sorgo plots, the fanning and grading of seed wheat, the hauling-in and weighing of the Sudan grass, and the hoeing of weeds. Sudan grass is running about 2300 pounds to the acre with a small second cutting already assured.

Dr. John H. Martin visited the station August 28 in the interest of proso and grain sorghum experiments.

Maximum temperature 88; minimum 51; precipitation, .44 inch.

NORTH PLATTE:

Rain on August 28 amounted to .96 inch on the table. This will be of great benefit in filling out the corn crop, reviving pastures and preparing land for fall seeding.

Some dry land Triumph seed potatoes were harvested to-day for shipment to Bermuda. The crop in the seed producing sections of western Nebraska does not mature early enough to reach Bermuda for planting in time to mature a crop there for the mid-winter market. For several years, seed produced in western Nebraska has been planted early at North Platte, harvested in August and shipped to Bermuda for experimental planting. Very good results have been secured.

COLBY:

This has been another favorable week for crop development. A shower of .63 inch last Saturday, August 23, followed by fairly warm weather during most of the week caused the corn to fill rapidly and the sorghums to make heavy vegetative growth. The feterita and kafir are now fully headed, and there are numberous heads showing in the milo. The milo is taller and the vegetative growth is much heavier than it has been for several years.

The small grain plots that have been worked are showing considerable volunteer growth. In Rotation 503, where the winter wheat stubble was disked after harvest, the plot is a green mat of volunteer wheat. This is also true of all small grain fields that have been disked or one-wayed in this section of the State. Many farmers are taking advantage of the extremely favorable conditions by seeding their wheat. Thousands of acres of drilled wheat are now up to good stands.

Grasshoppers are very numerous. Considerable damage has been done to corn in some sections of the county. In some fields the hoppers are still doing appreciable damage. If considerable damage is not done to the wheat it will probably be due to the fact that there is such an unusual abundance of green vegetation everywhere.

Maximum temperature 89; minimum 56; precipitation, .66 inch.

GARDEN CITY:

Another week of dry weather. There were plenty of clouds but no rain of any value. We had three small showers, none of which was over .10 inch. Kafir and milo, except on fallow, are not heading.

Cowpeas were weighed and hauled in the past week. Yields were slightly over a half ton per acre. Even with dry weather weeds seem to make good headway. Each week it takes some hoeing to keep roadways and alleys clean.

Garden City, continued:

No seed-bed preparation has been done to early plowed or listed plots. We have been waiting for rain to start weed growth and germinate volunteer wheat in plots, but to date it is bone dry. Rainfall during August has totaled .54 inch against a normal precipitation of 2.35 inches. The rain to date in August has been in seven different showers, none of which had any permanent value.

Maximum temperature 92; minimum 54; precipitation, .15 inch.

TUCUMCARI:

A rain of 1.14 inches on August 27 arrived in time to revive nearly all crops. Only .33 inch had been received in the preceding 33 days and all crops were in critical condition. Very possibly the corn yield has been materially reduced by the dry weather, but sorghums have a fair chance of making fair to good yields. Cowpeas were firing prematurely and were cut early in the week with the mower. It is hoped considerable second growth will be made.

Since the rain, temperatures have been much lower and crops have responded rapidly. Station work has consisted of hauling clay to roadways, roguing plots, cultivation of tree rows, and preparing for a county Four H Club picnic, fair, and demonstration which will be held on the station Monday, September 1.

Official visitors during the week included Professors Wilson and Overpeck and Mr. John Carter, of the State College, and Mr. J. R. Horton, Entomologist, of Wichita, Kansas.

Maximum temperature 98; minimum 55; precipitation, 1.14 inches.

Wind velocity, 4.6 miles per hour; evaporation, 1.812 inches.

DALHART:

Three light showers during the week have assisted in keeping the sorghums growing. Precipitation during the week, including a shower of .22 inch late this afternoon, August 30, amounted to .96 inch. Sorghums, cowpeas and soybeans are developing rather slowly. The early sorghums are beginning to color up appreciably.

Dalhart, continued:

The cotton was sprayed again for cotton leaf worm. Sparrow shooting was continued during the week.

The following entomologists of the Bureau of Entomology visited the station August 25: Dr. W. H. Larrimer, Principal Entomologist in charge of forage and cereal insect investigations, Mr. J. R. Horton, of the Wichita, Kansas, Laboratory, Mr. E. V. Walter, of the San Antonio, Texas, Laboratory, and Mr. V. L. Wildermuth, Mr. E. G. Davis, and Mr. J. C. Frankenfeld, of the Tempe, Arizona, Laboratory.

With the exception of the uneven height on some sorghums and the firing of bottom leaves on thickly planted sorghums, the station plots present a very good appearance at the present time.

Maximum temperature 88; minimum 57; precipitation, .74 inch.
Wind velocity, 4.9 miles per hour; evaporation, 1.819 inches.

BIG SPRING:

Although the weather has remained hot and dry during the past week, the maximum temperatures were shomewhat less than they were during the earlier part of the month. The effects of the dry weather have been very apparent the last few days. Milo plots which have been holding up very well are now burning considerably. Other grain sorghums are also suffering. When the rains were received about a month ago, it was thought that there was moisture to mature a normal crop of grain sorghums. The rains were very local at that time. This fact, together with the constant high temperatures since, tended to use up the moisture very fast.

The soybean varieties were harvested for hay during the week, and some early grain sorghums were harvested; the first date of planting of cotton consisting of three varieties were picked. Other work consisted of duckfooting fallows and putting a new roof on the cattle shed.

Maximum temperature 99; minimum 60; precipitation, none.

LAWTON:

Decidedly lower temperatures since August 23 provided much relief for animal and plant life. There have been no other climatic changes and the protracted drought continues with intensity. The maximum temperatures since August 23 ranged from 81 to 96 and the minimum varied from 60 to 68.

Harvest of all of the remaining rotation plots of kafir, feterita, and sumac was completed during the week. With the exception of a few plots of Spur feterita practically no grain was produced.

The first picking of cotton was made on about one-third of the rotation plots August 29 and 30. A second picking was also made on this date on some of the spacing tests. The yields are pitifully low and the quality of lint very inferior. A few bales are coming in to the gins from surrounding farms but there is practically no market as yet.

About 4000 head of cattle are being temporarily grazed on the Fort Sill Military Reservation. Considerable hay is being put up by farmers who are seriously in need of roughage of some sort.

Precipitation from January 1 to August 31 amounts to 14.66 inches. The normal for this period is 24.92 inches. Deficiency, 10.26 inches. The precipitation from June 16 to August 31, falling on eight different dates amounts to 1.43 inches.

WOODWARD:

The drought at Woodward which has endured the larger part of three months was "broken" by less than an inch of rain during the past week. This started a rampant weed growth on all fallow plots. The light rainfall, together with moderate temperatures, has greatly helped the sorghum crops. They have apparently developed immense root systems, much of which lie very close to the surface. They are, therefore, benefited far more by light rains than usual. That as good crops as prevail on the station could have been made with so little rains astonishes everyone who sees them.

Station work for the week has consisted mainly of cultivating fallows, rouging sorghum increase fields, and constructing new light line.

Maximum temperature 95; minimum 63; precipitation, .86 inch.